

Claims

1. Nozzle for washing a gas turbine unit (1) arranged to atomize a wash liquid in
5 the air stream in an air intake (2) of said gas turbine unit (1) comprising a
nozzle body (40) comprising an intake end (41) for intake of said wash liquid and
outlet end (55) for exit of said wash liquid, characterized in that a
number of orifices (42, 46; 42, 46, 60) are connected to the outlet end (55) and
in that respective orifice (42, 46; 42, 46, 60) is arranged at a suitable distance
10 from a centre axis (49) of said nozzle body (40).
2. Nozzle according to claim 1, characterized in that respective orifice (42,
46; 42, 46, 60) is arranged at an angle with respect to said centre axis (49)
such that the liquid emanating from respective orifice opening (43, 47; 43, 47,
15 61) is directed against at point of an axis that constitutes an extension of said
centre axis (49).
3. Nozzle according to claim 2, characterized in that each of said orifices
(42, 46; 42, 46, 60) is arranged at substantially the same distance from said
20 centre axis (49) and at substantially the same angle with respect to said axis
that constitutes an extension of said centre axis (49).
4. Nozzle according to claim 2 or 3, characterized in that said orifices (42,
46; 42, 46, 60) are arranged such that their openings (43, 47; 43, 47, 61) are
25 directed said axis that constitutes an extension of said centre axis (49) with a
conjunction point within the range of 5-30 cm from said orifice openings (43,
47; 43, 47, 61).
5. Nozzle according to any one of preceding claims, characterized in that
30 the liquid pressure in said orifices (42, 46; 42, 46, 60) is within the range of 35 –
175 bar.

6. Nozzle according to claim 5, characterized in that said orifice openings (43, 47; 43, 47, 61) are arranged to, in cooperation with said liquid pressure, cause said liquid to stream out with a liquid velocity in the range of 50 – 250 m/s.

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7. Nozzle according to any one of preceding claims, characterized in that each of said orifice openings (43, 47; 43, 47, 61) has substantially the same design.

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8. Nozzle according to any one of preceding claims, characterized in that said orifices (42, 46; 42, 46, 60) are arranged to form a spray into a form in accordance with any one of from the group of substantially circular, substantially elliptical or substantially rectangular.

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9. Nozzle according to any one of preceding claims, characterized in that two orifices (42, 46) are connected to said outlet end.

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10. Method for washing a gas turbine unit (1) comprising the step of atomizing a wash liquid in an air intake (2) of said gas turbine unit (1) by using a nozzle (54) comprising a nozzle body (40) comprising an intake end (41) for intake of said wash liquid and an outlet end (55) for exit of said wash liquid, characterized by the step of

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producing said atomized wash liquid by delivering said liquid to a number of orifices (42, 46; 42, 46, 60) connected to said outlet end (55), wherein respective orifice (42, 46; 42, 46, 60) is arranged at a suitable distance from a centre axis (49) of said nozzle body (40).

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11. Method according to claim 10, characterized by the step of directing the liquid emanating from the opening of respective orifice (43, 47; 43, 47, 61) against at a point of an axis that constitutes an extension of said centre axis (49).

12. Method according to claim 11, characterized by the step of directing the liquid emanating from the each of the orifices (42, 46; 42, 46, 60) against said axis that constitutes an extension of said centre axis (49) with substantially the same angle by arranging each of said orifices (42, 46; 42, 46, 60) at substantially the same distance from said centre axis (49) and at substantially the same angle with respect to said axis that constitutes an extension of said centre axis (49) and at substantially the same angle with respect to said axis that constitutes an extension of said centre axis (49).

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13. Method according to claim 11 or 12, characterized by the step of directing said openings the orifices (43, 47; 43, 47, 61) against said axis that constitutes an extension of said centre axis (49) with a conjunction point within the range of 5-30 cm from said orifice openings (43, 47; 43, 47, 61).

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14. Method according to any one of the claims 10-13, characterized in that the liquid pressure in said orifices (42, 46; 42, 46, 60) is within the range of 35 – 175 bar.

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15. Method according to any one of the claims 10-14, characterized in that said orifice openings (43, 47; 43, 47, 61) are arranged to, in cooperation with said liquid pressure, cause said liquid to stream out with a liquid velocity in the range of 50 – 250 m/s.

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16. Method according to any one of the claims 10-15, characterized in that each of said orifice openings (43, 47; 43, 47, 61) has substantially the same design.

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17. Method according to any one of the claims 10-16, characterized in that said orifices (42, 46; 42, 46, 60) are arranged to form a spray into a form in accordance with any one of from the group of substantially circular, substantially elliptical or substantially rectangular.

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18. Method according to any one of the claims 10-17, characterized in that two orifices (42, 46) are connected to said outlet end.

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